

Amendments To The Claims.

1. (Original) A method of moulding a contact lens using a male mould and a female mould, the method comprising the steps of:
 - (a) introducing lens-forming material in a liquid state into the female mould;
 - (b) inserting the male mould into the female mould to a first relative position to form an assembly of the male and female moulds in which the moulds together define a moulding cavity and a reservoir for lens-forming material;
 - (c) during the insertion of the male mould to the first position thereof expelling part of the liquid state lens-forming material from the moulding cavity to the reservoir;
 - (d) initiating curing of the lens-forming material in the moulding cavity whilst keeping open a pathway between the moulding cavity and the reservoir so as to allow lens-forming material to flow from the reservoir into the moulding cavity to compensate for shrinkage of the lens-forming material during curing;
 - (e) applying an external force on the assembly of moulds to insert the male mould further into the female mould to a second position relative to the female mould in which the moulding cavity is closed and sealed off from the reservoir;
 - (f) allowing the lens-forming material to complete transformation to a final, glassy solid state within the sealed moulding cavity; and
 - (g) removing the formed contact lens from the assembly of male and female moulds after the lens-forming material has reached the final glassy solid state thereof.

2. (Original) A method as claimed in claim 1 wherein:

the assembly of male and female moulds is heated to initiate curing of the lens-forming material.

3. (Currently Amended) A method as claimed in claim 1 ~~or 2~~ wherein:

the male and female moulds are heated at least until the closing of the mould cavity and prior to the closing of the mould cavity the lens-forming material is kept at a temperature above the glass transition temperature of the lens-forming material;

the lens-forming material is cooled below the glass transition temperature in the closed moulding cavity; and

removing the formed contact lens from the mould cavity occurs after the lens-forming material has cooled below the glass transition temperature thereof.

4. (Currently Amended) A method as claimed in ~~any one of claims 1 to 3~~ claim 1 wherein a thickener is added to the lens-forming material to increase the viscosity of the lens-forming material.

5. (Currently Amended) A method as claimed in ~~any one of claims 1 to 4~~ claim 1 which ~~include~~ includes the steps of:

forming the male and female moulds by an injection moulding process and using each pair of injection moulded male and female moulds only once in the formation of a single contact lens.

6. (Original) A method as claimed in claim 5 wherein:

a plurality of pairs of male and female moulds are injection moulded;
the liquid state lens forming material is deposited in the plurality of female moulds;
the plurality of male moulds are inserted into the female moulds, each being inserted to a first position in a respective female mould, to form a plurality of assemblies of male and female moulds;

the plurality of male moulds are all simultaneously displaced from the first positions thereof to the second positions thereof.

7. (Currently Amended) A method as claimed in ~~any one of the preceding claims~~ claim 1 wherein:

the assembly(ies) of moulds is/are placed in a curing oven;
timing means is used to time duration of residence of the moulds in the curing oven;
and

after a first measured time period the external force is applied to each male mould to move each male mould from the first position thereof to the second position thereof.

8. (Original) Apparatus for moulding a contact lens by the method of claim 1 comprising:

a male mould;
a female mould;
insertion means for inserting the male mould into the female mould; and
ram means;
wherein in making each contact lens the apparatus operates by:

inserting the male mould into the female mould to a first position relative to the female mould, the male mould and the female mould being adapted to together define a moulding cavity and a reservoir for lens forming material when the male mould is inserted into the female mould;

lens-forming material in liquid state previously introduced into the female mould being in part enclosed in the moulding cavity defined by the male and female moulds and in part expelled from the moulding cavity to the reservoir during insertion of the male mould into the female mould;

initiating curing of the lens-forming material in the moulding cavity whilst the male mould is in the first relative position and thereby keeping open a pathway between the moulding cavity and the reservoir so as to allow lens-forming materials to flow from the reservoir into the moulding cavity to compensate for shrinkage of the lens-forming material during curing;

the ram means applying an external force on the assembly of moulds to insert the male mould further into the female mould to a second position relative to the female mould in which the moulding cavity is sealed off from the reservoir; and

allowing the lens-forming material to complete transformation to a fixed, glassy solid state with the sealed moulding cavity.

9. (Original) Apparatus as claimed in claim 8 wherein the male and female moulds are shaped to provide the closed moulding cavity with an edge region triangular in cross-section.

10. (Currently Amended) Apparatus as claimed in claim 8 ~~or claim 9~~ wherein the female mould is provided with an annular lip.
11. (Original) Apparatus as defined in claim 10 wherein said annular lip lies in a plane extending radially of the moulding cavity.
12. (Original) Apparatus as claimed in claim 11 wherein said male mould is provided with a frusto-conical region adjacent a spherical central region of the mould and the frusto-conical region abuts the annular lip of the female mould when the male mould is in the second position thereof.
13. (Currently Amended) Apparatus as claimed in ~~any one of claims 8 to 12~~ claim 8 wherein the male mould has a cylindrical portion and the female mould has a matched cylindrical portion and the matched cylindrical portions co-operate to ensure the correct location of the male mould in the female mould.
14. (Currently Amended) Apparatus as claimed in ~~any one of claims 8 to 13~~ claim 8 wherein each of the male and female moulds is an injection moulded mould and the assembly of moulds is for formation of a single contact lens.
15. (Currently Amended) Apparatus as claimed in ~~any one of claims 8 to 14~~ claim 8 comprising a curing oven in which the assembly of male and female moulds is locatable.

16. (Original) Apparatus as claimed in claim 15 comprising timing means for timing duration of residence of the assembly of male and female moulds in the curing oven and triggering means for actuating the application of external force by the ram means when a chosen duration of residence is reached.
17. (Original) Apparatus as claimed in claim 16 wherein the ram means comprises a mass retention means for holding a mass in an elevated position above the male mould, which retention means releases the mass when triggered by the triggering means, the mass then falling to apply the external force on the assembly of moulds.
18. (Original) Apparatus as claimed in claim 17 which further comprises a lifting mechanism for lifting the mass to the elevated position thereof.
19. (Currently Amended) Apparatus as claimed in ~~any one of claims 15 to 18~~ claim 15 wherein the base of the curing oven is provided with a plurality of rows of rollers, wherein at least one roller in one of said rows is displaced vertically upwardly of the rollers in the other row(s).
20. (Original) Apparatus as claimed in claim 19 wherein the rollers are roller-balls.

21. (Currently Amended) Apparatus as claimed in claim 19 ~~or claim 20~~ comprising a tray for transporting the assembly of male and female moulds in the curing oven, the tray having a recess formed in the underside thereof for receiving at least a portion of each roller in said row of rollers displaced vertically upwardly of the other row(s) of rollers.